# 2.0 Assessment of ATS Needs

## 2.1 Summary of ATS Needs

For the purposes of this study, Alternative Transportation Systems (ATS) refers to transit services. The study identified existing transit services that need to be expanded or modified, as well as new transit services. The identified transit needs include services that would operate completely within Federal sites, and services that would link Federal sites to surrounding communities. Transit vehicles identified in this study include trams, standard transit buses, small buses, historic trolleys, trolley cars, waterborne vessels, and aerial tramways. The transit needs identified fall into three primary types of transportation: bus transit, rail/ guided transit, and waterborne transit. Bus transit is currently the most common mode of transit service operating on Federal lands, and is likely to continue as the predominant mode, although waterborne transit needs are significant as well. Because of the small number of rail projects identified, bus and rail needs are combined into a single "surface" transportation category in the report's tables. The ATS needs cost figures in the study include project development costs, capital costs, and operations and maintenance costs.

*"Red Bus" – Glacier National Park, Montana*

The study identified transit needs for both the short-term (2001-2010) and long-term (2011-2020) periods. The total combined need for both short-term and long-term periods is estimated at approximately $1.71 billion. Of this $1.71 billion, approximately 40 percent ($678 million) is required between 2001 and 2010, with the remaining 60 percent ($1.03 billion) required between 2011 and 2020. Table 1 summarizes the ATS needs identified in the study.

*Santa Monica Mountains National Recreation Area, California*

*Russian River Ferry, Kenai National Wildlife Refuge, Alaska*

## Table 1. Summary of Alternative Transportation System Needs on Federally-Managed Lands*

| | Sites Demonstrating Need | Total Sites Evaluated | Short-Term Costs† (2001-2010) | Long-Term Costs† (2011-2020) | Total Costs† (2001-2020) |
|---|---|---|---|---|---|
| ***National Park Service*** | | | | | |
| Surface | | | $510,000,000 | $ 827,000,000 | $1,337,000,000 |
| Water | | | 94,000,000 | 123,000,000 | 217,000,000 |
| **NPS Total** | **118** | **169** | **$604,000,000** | **$ 950,000,000** | **$1,554,000,000** |
| ***Bureau of Land Management*** | | | | | |
| Surface | | | $ 6,000,000 | $ 7,000,000 | $ 13,000,000 |
| Water | | | 9,000,000 | 8,000,000 | 17,000,000 |
| **BLM Total** | **6** | **15** | **$ 15,000,000** | **$ 15,000,000** | **$ 30,000,000** |
| ***U.S. Fish and Wildlife Service*** | | | | | |
| Surface | | | $ 40,000,000 | $ 53,000,000 | $ 93,000,000 |
| Water | | | 19,000,000 | 14,000,000 | 33,000,000 |
| **USFWS Total** | **13** | **23** | **$ 59,000,000** | **$ 67,000,000** | **$ 126,000,000** |
| ***TOTAL ATS Needs*** | | | **$678,000,000** | **$1,032,000,000** | **$1,710,000,000** |

*Note: All estimates are in 1999 dollars and are not adjusted for inflation.

†Note: Total costs include project development costs, vehicle capital costs, other capital costs, and operations and maintenance costs.

*Manitou Island Transit Ferry Terminal*
*Leland, Michigan*

The growth in costs between the short-term and the long-term periods is a result of two types of cost increases. A number of capital-intensive projects were identified during the study that will require long lead times to plan and obtain funding. Therefore, the capital costs for these projects are included in the long-term period costs. Secondly, the annual operations and maintenance costs increase substantially for this period because of the greater number of systems operating during the long-term period. At a majority of sites where transit is feasible and prudent, transit needs are modest and can be served by a small number of vehicles operating on a seasonal basis. At many sites, there appear to be opportunities to recover a portion of operations and maintenance costs through fares. At a smaller number of sites, it may be possible to charge fares that are adequate to recover a portion of capital investment as well.

## 2.2 ATS Needs by Agency, System Status and Type of Expenditure

Table 2 includes further details of the ATS needs on federally-managed lands. The table provides cost information categorized by agency, system status, and type of expenditure. The total up front cost (project development and capital costs) between 2001 and 2010 is $292 million. The total up front cost between 2011 and 2010 is $432 million.

*Trams at Shark Valley,*
*Everglades National Park, Florida*

The increased demand for new systems is the major factor driving the increase in projected needs between 2011 and 2020. Between 2001 and 2010 roughly half of the projected need is for existing and/or expanded systems and half is for new systems. Between 2011 and 2020, the proportion of projected need for new systems rises to approximately 70 percent, a result of the fact that a number of capital-intensive projects were identified for this period. These projects require a long lead time for planning, implementation, and funding.

Estimates were developed for project development, capital, and operations and maintenance costs. Project development costs include conceptual planning, engineering design, and environmental evaluation. Capital costs include vehicle capital costs and other capital costs. Vehicle capital costs include the costs of purchasing land-based vehicles (bus, tram, trolley, etc.) or waterborne vehicles (monohull, catamaran, etc). Other capital costs include maintenance and storage facilities, parking areas, docks, piers, administrative facilities, shelters and waiting areas, and construction management costs for projects requiring significant construction. Operations and maintenance costs include the full range of administrative, operating, and maintenance costs, including labor, benefits, fuel, parts, marketing expenses, and insurance.

*Assateague Island National Seashore, Maryland*

*Devil's Tower National Monument, Wyoming*

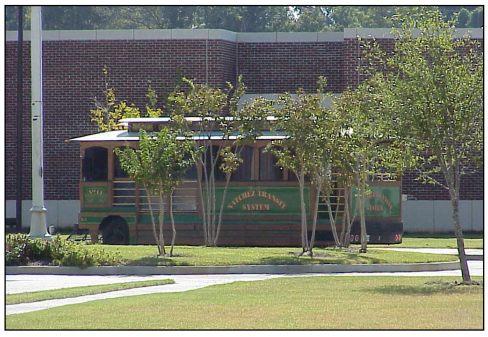
# Table 2. Potential ATS Needs by Agency, System Status, and Type of Expenditure*

| | Costs for Existing and Expansion of Existing Systems | | | | | Costs for New Systems | | | | | Total Up - Front Costs for Existing, Expanded and New Systems | Total Operations and Maintenance Costs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Project Development | Vehicle Capital Costs | Other Capital Costs | Total Up-Front Costs† | Operations & Maintenance | Project Development | Vehicle Capital Costs | Other Capital Costs | Total Up-Front Costs† | Operations & Maintenance | | |
| ***Short Term (2001-2010)*** | | | | | | | | | | | | |
| BLM | $ 45,000 | $ 450,000 | $ 0 | $ 495,000 | $ 2,419,800 | $ 429,875 | $ 1,375,000 | $ 1,607,500 | $ 3,412,375 | $ 9,265,600 | $ 3,907,375 | $ 11,685,400 |
| FWS | 979,700 | 2,995,000 | 2,642,000 | 6,616,700 | 8,817,800 | 1,736,550 | 4,665,000 | 5,481,000 | 11,882,550 | 32,061,300 | 18,499,250 | 40,879,100 |
| NPS | 21,659,119 | 93,298,125 | 42,066,000 | 157,023,244 | 147,646,800 | 14,317,742 | 54,480,000 | 43,516,945 | 112,314,687 | 185,881,340 | 269,337,931 | 333,528,140 |
| | **$22,683,819** | **$ 96,743,125** | **$44,708,000** | **$164,134,944** | **$158,884,400** | **$16,484,167** | **$ 60,520,000** | **$ 50,605,445** | **$127,609,612** | **$227,208,240** | **$291,744,556** | **$386,092,640** |
| ***Long Term (2001-2020)*** | | | | | | | | | | | | |
| BLM | $ 22,500 | $ 450,000 | $ 0 | $ 472,500 | $ 2,419,800 | $ 161,625 | $ 1,475,000 | $ 50,000 | $ 1,686,625 | $ 10,443,800 | $ 2,159,125 | $ 12,863,600 |
| FWS | 281,850 | 2,995,000 | 0 | 3,276,850 | 8,817,800 | 2,207,800 | 9,150,000 | 3,912,000 | 15,269,800 | 39,842,500 | 18,546,650 | 48,660,300 |
| NPS | 8,367,606 | 94,973,125 | 10,743,000 | 114,083,731 | 151,895,800 | 40,223,272 | 129,240,000 | 127,904,000 | 297,367,272 | 386,456,340 | 411,451,004 | 538,352,140 |
| | **$ 8,671,956** | **$98,418,125** | **$10,743,000** | **$117,833,081** | **$163,133,400** | **$42,592,697** | **$139,865,000** | **$131,866,000** | **$314,323,697** | **$436,742,640** | **$432,156,779** | **$599,876,040** |
| **TOTAL (2002-2020)** | **$31,355,775** | **$195,161,250** | **$55,451,000** | **$281,968,025** | **$322,017,800** | **$59,076,864** | **$200,385,000** | **$182,471,445** | **$441,933,309** | **$663,950,880** | **$723,901,334** | **$985,968,680** |

*Rocky Mountain National Park, Colorado*

It should be noted that for the BLM and the USFWS, the needs in the "other capital costs" category go down in the long-term period, and in several cases are reduced to zero. This is because "other capital costs" primarily include major items such as maintenance facilities, docks, and piers. It was assumed that the life of these facilities would exceed 20 years. Therefore, if such an investment were included during the short-term period (2001-2010) and there was no proposed expansion of the system during the long-term period (2011-2020) then no needs would be assumed in the "other capital costs" category during the long-term period. Vehicles and vessels, on the other hand, were assumed to have a 10-year life, so replacement needs are identified in the long-term (2011-2020) period.

## 2.3 Potential ATS Needs by State



*Natchez National Historic Park, Mississippi*

Table 3 shows the total ATS needs in the short- and long-term periods, and the total ATS needs for the entire study period (2001-2020) by State. Table A.1, shown in Appendix I, includes a break down of the potential ATS needs in the short- and long-term periods by State, up-front costs and operations and maintenance costs. Table A.2, also in Appendix I, includes a further breakdown of the potential ATS needs by State, project development costs, vehicle capital costs, other capital costs, and operations and maintenance costs.

States with over $10 million in capital needs identified for the 2001-2010 period are Alaska, California, Colorado, Washington, D.C., Florida, Hawaii, Massachusetts, Montana, Nevada, New York, Utah, and Washington. States that have an estimated need of over $1 million annually in operations and maintenance costs are Alaska, Arizona, California, Colorado, Florida, Hawaii, Massachusetts, Michigan, New Mexico, New York, Texas, Utah, Virginia, and Washington. States with the largest increases in capital expenditures in the long-term period are Colorado, California, Massachusetts, Arizona, Wyoming, and Virginia.

## Table 3. Potential ATS Needs by State*

| State | Short-term (2001-2010) Total† | Long-term (2011-2020) Total† | Total 2000-2020 Costs† |
|---|---|---|---|
| Alaska | $ 44,707,800 | $ 36,972,300 | $ 81,680,100 |
| Arizona | 37,389,525 | 90,708,875 | 128,098,400 |
| Arkansas | 2,957,500 | 2,940,500 | 5,898,000 |
| American Samoa | 6,988,600 | 3,106,100 | 10,094,700 |
| California | 69,432,150 | 222,128,150 | 291,560,300 |
| Colorado | 25,016,000 | 162,603,100 | 187,619,100 |
| Connecticut | | 3,192,200 | 3,192,200 |
| Washington, D.C. | 24,000,000 | 21,000,000 | 45,000,000 |
| Florida | 41,077,900 | 31,973,700 | 73,051,600 |
| Georgia | 7,482,550 | 6,998,950 | 14,481,500 |
| Hawaii | 32,848,700 | 35,302,850 | 68,151,550 |
| Indiana | 392,600 | 369,100 | 761,700 |
| Iowa | 327,600 | 325,100 | 652,700 |
| Kansas | 5,074,000 | 10,090,900 | 15,164,900 |
| Louisiana | 2,181,500 | 4,620,800 | 6,802,300 |
| Maine | 4,017,594 | 3,831,281 | 7,848,875 |
| Maryland | 12,645,450 | 10,365,250 | 23,010,700 |
| Massachusetts | 68,550,275 | 108,360,925 | 176,911,200 |
| Michigan | 16,882,600 | 14,893,225 | 31,775,825 |
| Minnesota | 5,543,000 | 3,476,625 | 9,019,625 |
| Mississippi | 3,099,800 | 3,046,800 | 6,146,600 |
| Missouri | 5,284,300 | 5,219,550 | 10,503,850 |
| Montana | 25,163,050 | 18,759,450 | 43,922,500 |
| Nebraska | 859,200 | 854,200 | 1,713,400 |
| Nevada | 15,117,350 | 8,087,650 | 23,205,000 |
| New Hampshire | 599,600 | 597,100 | 1,196,700 |
| New Mexico | 22,526,000 | 22,158,500 | 44,684,500 |
| New York | 34,919,150 | 26,855,875 | 61,775,025 |
| North Carolina | 11,369,400 | 9,985,700 | 21,355,100 |
| Ohio | 7,713,700 | 9,310,150 | 17,023,850 |
| Oregon | 5,656,500 | 4,215,950 | 9,872,450 |
| Pennsylvania | 10,440,750 | 11,712,350 | 22,153,100 |
| Puerto Rico | 5,688,800 | 4,814,150 | 10,502,950 |
| Tennessee | 1,574,400 | 3,110,100 | 4,684,500 |
| Texas | 15,846,200 | 15,290,100 | 31,136,300 |
| Utah | 43,944,800 | 40,063,900 | 84,008,700 |
| Vermont | 933,100 | 933,100 | 1,866,200 |
| Virginia | 25,553,375 | 33,830,325 | 59,383,700 |
| Washington | 23,745,777 | 17,881,037 | 41,626,814 |
| West Virginia | 6,711,200 | 8,350,400 | 15,061,600 |
| Wyoming | 3,575,400 | 13,696,500 | 17,271,900 |
| **TOTAL** | **$677,837,196** | **$1,032,032,819** | **$1,709,870,014** |

* Note: All estimates are in 1999 dollars and are not adjusted for inflation
†Note: Total costs include project development costs, vehicle capital costs, other capital costs, and operations and maintenance costs.

Short-term total costs and long-term total costs are separated into up-front costs and operations and maintenance costs for each State in Tables A.1 and A.2, appendix I.